QUALITY AND RELIABILITY ENGINEERING INTERNATIONAL
(Qual. reliab. eng. int.)

CONTENTS

VOLUME 9, ISSUE Nos 1–6

Issue No. 1, January–February

Editorial 1

Letter to the Editor 2

SHORT COMMUNICATION
BITE and Unconfirmed Failures: R. A. Rees 3

Reliability Improvement via Taguchi's Robust Design: M. Hamada 7

Fault and Cause Diagnosis of Casting Defects: Case Study No. 2: F. B. J. Sweeting, W. R. Thorpe and A. N. Pettitt 15

Quality-based Design by Probability Optimization: D. B. Parkinson 29

Optimization Strategies in Robust Engineering Design and Computer-aided Design: R. J. Buck and H. P. Wynn 39

Total Customer Satisfaction as a Business Strategy: W. B. Smith Jr 49

Using Rainbow Net Simulation to Measure Fault Tolerance in a Multiprocessor: A. M. Johnson Jr., M. A. Schoenfelder and D. J. Lebold 55

Detecting Test Set Hardware Degradation using Statistical Data Modelling: R. W. Potter and G. W. Sturm 63

NEWS DIGEST 69

Call for Papers 73

INTERNATIONAL CALENDAR OF FORTHCOMING EVENTS 74

Call for Papers 78

BOOK REVIEWS 79

Issue No. 2, March–April

Editorial 81

LETTER TO THE EDITOR
Special Report: Survey of the Present Status on Critical Reliability Issues within Europe: H. E. Maes 83

The Japanese Point of View on the ISO 9000 Standards: H. Kume 85

SPC of a Near Zero-defect Process Subject to Random Shocks: M. Xie and T. N. Goh 89

A Computer-controlled Environmental Test System for High Pin-count Integrated Circuit Packages: J. Barrett, J. Ó. Donavan, T. Hayes and S. C. Ó. Mathúna 95

Simple Adjustments to Improve Control Limits on Attribute Charts: A. Winterbottom 105

A Method of Identifying Latent Human Errors in Work Systems: T. Nakajo 111

Index or abstracted by Cambridge Scientific Abstracts, Engineering Index, INSPEC, Materials Information, Operations Research/Management Science, Quality Control & Applied Statistics and VINITI—U.S.S.R. Academy of Science

The Electrical Design for Manufacture of Ceramic Capacitors: C. D. Hannaford and H. Ingleson 121

An Application of a Bathtub Failure Model to Imperfectly Repaired Systems Data: C. E. Love and R. Guo 127

Using Sneak Circuit Analysis in Aerospace Product Assurance: J. Deckers and H. Schäbe .. 137

A Comparative Reliability Assessment of 750 nm, 1060 nm and 1300 nm High Power Surface Light Emitting Diodes: C. E. Lindsay 143

NEWS DIGEST 149

INTERNATIONAL CALENDAR OF FORTHCOMING EVENTS 152

Call for Papers 156

Courses in Quality and Reliability 157

BOOK REVIEWS 159

Issue No. 3, May–June

Special Issue on Total Quality Management in Engineering
Guest Editor: John S. Oakland

Call for Papers ii

Editorial 161

Quality and Reliability: Illusions and Realities: P. D. T. O'Connor 163

The Key Features of Japanese Total Quality Control: B. G. Dale 169

Total Quality Management in Hong Kong Industry and its Subsidiaries in China: T. Y. Lee . 179

Taguchi Methods: Some Technical, Cultural and Pedagogical Perspectives: T. N. Goh 185

The *Total Costs of Quality: What Else Should be Contemplated?*: S. H. Elsen and R. F. Followell 203

A New Approach to Reliability of Commercial and Military Aerospace Products: Beyond Military Quality/Reliability Standards: G. A. *Kromholtz and L. W. Condra* 211

Consistency in Quality—a Baseline for Achieving Total Quality Management: M. H. Carlsson 217

NEWS DIGEST 227

INTERNATIONAL CALENDAR OF FORTHCOMING EVENTS 232

BOOK REVIEWS 236

Issue No. 4, July–August

Special Issue: Papers presented at the European Symposium on Reliability of Electron Devices, Failure Physics and Analysis 1992 (ESREF '92), Schwäbisch Gmünd, Germany, October 1992
Guest Editors: H. H. Berger and W. H. Gerling

Editor's Comments: H. H. Berger and W. H. Gerling 237

Simulation, a Tool for Designing-in Reliability: A. Brombacher, E. van Geest, R. Arendsen, A. Van Steenwijk and O. Herrmann 239

The Impact of Electronic Components on the Reliability of Cars: H.-G. Kumpfmüller 251

Field Components Reliability Analysis for French Telecommunications Equipment: J. Y. Boulaire, B. Bauduin and A. Lelievre 257

Plastic Encapsulated IC Reliability Prediction Modelling: Principal Results: M. Nallino, R. Digout, G. Deleuze and M. Brizoux 267

Robust Design of Circuits Susceptible to Electromigration: E. van Geest, A. Brombacher and O. Herrmann 281

Electromigration, Models and Atomistic Interpretation: R. Kirchheim 287

Electromigration Early Resistance Increase Measurements: J. Niehof, P. A. Flinn and T. J. Maloney 295

Electromigration in AlCu Interconnections with W-plug Contacts: L. Ferlazzo, G. Reimbold, J. P. Gonchond, M. Heitzmann, O. Demolliens and G. Lormand 299

Thermoreflectance Optical Test Probe for the Measurement of Current-induced Temperature Changes in Microelectronic Components: W. Claeys, S. Dilhaire, V. Quintard, J. P. Dom and Y. Danto 303

On the Use of DC Measurements for ESD-related Process Monitoring: J. M. Luchies, F. Kuper and J. Verweij 309

Analysis of ESD Protection Networks for DMOS Power Transistors by Means of Static and Time-resolved Emission Microscopy: B. Bonati, A. Canclini, M. Cavone, E. Novarini, P. Pavan, R. Rivoir, M. Stucchi and E. Zanoni 315

Breakdown Characteristics of Gate and Tunnel Oxides versus Field and Temperature: C. *Monsérié, P. Mortini, G. Ghibaudo and G. Pananakakis* 321

A New Approach to Statistically Modelling the Time-dependent Oxide Breakdown: R.-P. Vollertsen 325

Limitations of Oxide Breakdown Accelerated Testing for Reliability Simulation: M. Nafría, J. Suñé and X. Aymerich 333

Two-dimensional Modelling and Characterization of Gate-to-drain Overlap Contribution on the Leakage Current of a MOSFET, used as a GCD: E. Ciantar, S. Burgniard, R. Jérisian and J. Oualid 337

Reliability Issues of Offset Drain Transistors after Different Modes of Electrical Stress: C. *Papadas. P. Mortini, C. Monsérié, G. Ghibaudo and G. Pananakakis* 341

Reliability Simulations of the Endurance Performance of FLOTOX EEPROM Cells using SPICE: F. Gigon, C. Papadas, G. Ghibaudo, G. Pananakakis and P. Mortini 347

Analysis of MOS SOI Transistor Degradation: V. Berland, A. Touboul and O. Flament 353

Low Frequency Noise and Reliability Analysis of Avalanche Photodiodes: B. K. Jones and D. A. Kozlowski 359

Degradation Behaviour of Highly Coherent 1·55 μm Long-cavity Multiple Quantum Well DFB *Lasers: M. Fukuda, F. Kano, T. Kurosaki and J.-I. Yoshida* 363

Failure Mechanisms in Life-tested HEMTs: W. T. Anderson, K. A. Christianson and C. Moglestue 367

Failures of AlGaAs/GaAs HEMTs Induced by Hot Electrons: C. Tedesco, C. Canali, F. Magistrali, A. Paccagnella and E. Zanoni 371

Very High Temperature Test of InP-based Laser Diodes: M. Tesauri, G. Chiorboli, P. Cova, F. *Fantini, F. Magistrali and D. Sala* 377

MATHEMATICAL CORNER 383

NEWS DIGEST 387

CALL FOR PAPERS 391

INTERNATIONAL CALENDAR OF FORTHCOMING EVENTS 392
Courses in Quality and Reliability 396
BOOK REVIEWS 398

Issue No. 5, September–October

Editorial 399
Correlation between EMI-induced Failures and Large-signal Response of FET-input Opamps: D. Golzio, S. Graffi, Z. M. V.-Kovács and G. Masetti 401
Analysis of Run-in Process for PC Manufacturing: A. Accumolli 407
Maintenance Planning and Resource Allocation in a Urea Fertilizer Plant: D. Kumar and P. C. Pandey 411
Autoclave Tests of 64K and 256K SRAMs: H. A. Polman and K. Fokkens 425
Product Warranty and Quality Control: D. P. Murthy, R. J. Wilson and I. Djamaludin 431
A General Approach for Testing the Process Capability Index: L. L. Hoffman 445
Consideration of Maintenance Objectives in the Design and Development of Software: K. C. Keene and S. J. Keene 451
NEWS DIGEST 459
Call for Papers 463
INTERNATIONAL CALENDAR OF FORTHCOMING EVENTS 464
BOOK REVIEWS 467
Report Review 468

Issue No. 6, November–December

Editorial 469
On Parameter Design of Binary-input-and-binary-output Dynamic Systems: B.-J. Yum and S.-J. Kim 471
Localization and Characterization of Latch-up Sensitive Areas using a Laser Beam: Influence on Design Rules of ICs in CMOS Technology: P. Fouillat, Y. Danto and J. P. Dom 477
Reliability Testing of Polyimides for GaAs MMIC Applications: R. F. B. Conlon and J. A. Turner 483
A Comparison of Deterministic and Statistical Sampling Techniques for Quality Analysis of Integrated Circuits: A. A. Ilumoka 489
Comparative Study of Quantitative Models for Hardware, Software and Human Reliability Assessment: L. Bodsberg 501
Computer Simulation of Fast Electromigration Lifetime Determination Techniques: T. H. Gilfedder and B. K. Jones 519
NEWS DIGEST 525
INTERNATIONAL CALENDAR OF FORTHCOMING EVENTS 528
Courses in Quality and Reliability 531
CALL FOR PAPERS 532

BOOK REVIEWS 533
Author Index 535
Key Word Index 537